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14. ABSTRACT With limited resources, USAFRICOM currently focuses its efforts on the African continent in areas related to traditional security concerns such as combating terrorism, trafficking and coastal patrols. This paper argues that the expected climate changes within the continent can be known with enough fidelity to warrant changing how the command allocates resources within Africa in pursuit of American strategic interests. Focusing on West Africa and Nigeria in particular, the expected migration patterns and humanitarian stresses in the region are likely to channel towards Nigeria. Current engagement methods are not only ill-prepared to meet long-term objectives even without considering climate change, but are void of displaying any significant forethought regarding climate change and how to best enable the continent to deal with that threat.					
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Newport, R.I.**

Testing the Waters: Climate Change in Africa and Anticipating Regional Conflicts

by

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A paper submitted to the Faculty of the Naval War College in partial satisfaction of the requirements of the Department of Joint Military Operations.

The contents of this paper reflect my own personal views and are not necessarily endorsed by the Naval War College or the Department of the Navy.

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4 May 2011

Abstract

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INTRODUCTION

“People who have nothing to live for are willing to die for almost anything if they feel it might better protect their families and way of life. Individuals who commit criminal terrorist acts aren’t born; they are created through years of deprivation, disenfranchisement, and desperation.” - Shannon Beebe¹

Africa has become a region of significant interest to the United States (US) over the past several decades, and it is expected to demand even more attention from national policy and military leaders in the coming twenty to thirty years. Instability, humanitarian crises and terrorism threats are already substantial concerns and the outlook of the challenges that the regional leaders and population face are grim. The establishment of United States Africa Command (USAFRICOM) was a deliberate attempt to move away from a long history of disjointed, overlapping and inefficient engagements by numerous American agencies with no coordinated purpose among them. In spite of USAFRICOM being a Combatant Command with a unique organizational structure to emphasize peaceful operations, it is still limited by a constrained fiscal environment and limited resources. This situation is not expected to improve significantly anytime soon. For this reason, USAFRICOM and its partner agencies have strived to focus their limited means in ways that their current leaders feel will maximize the ability to achieve the national strategic objectives.

Unfortunately, global climate change (GCC) is expected to affect developing countries more than any other and Africa is expected to see some of the most severe problems in the world. By considering likely regional responses to the stresses of GCC,

¹ Shannon Beebe, *US Strategy in Africa: AFRICOM, terrorism and security challenges*. Edited by D. J. Francis. (New York, NY: Routledge, 2010), 110.

especially water scarcity and population displacement, the US could gain more benefits over the long term by changing how they engage and allocate resources within the continent.

COUNTER-ARGUMENTS

Some may argue that the current way that AFRICOM prioritizes engagement is the best method that balances both limited resources and short or long-term priorities against the widespread problems throughout the region and the difficulty in anticipating specific problems. Two main issues must be addressed before considering changing how USAFRICOM pursues an end goal in Africa based upon concern over climate change pressures. First is the argument that, war over water has not occurred in 4,500 years and that it is impossible to support the assertion that water is the cause of any conflict. Second is the question of how accurate the forecasts of the future environment are and what the likely responses of populations and their leaders will be.

The last time that water was the sole cause of war was about 2,500 B.C.E. in what is now southern Iraq. In contrast, current cooperation is at an all-time high, as the past 60 years alone has seen over 160 water related treaties signed.² To illustrate the ways that some combustible international relationships have cooperatively handled water scarcities, one could look at Pakistan and India. Conflicts between these two nations have developed for reasons unrelated to resources, yet the issue of water access is so critical, that they have managed to remain cooperative on this issue throughout periods of overt hostilities between them. These examples would seem to cast doubt upon the legitimacy of the argument that there is a pending crisis in this issue.

² Sandra Postel, Aaron Wolf, "Dehydrating Conflict," *Global Policy*, 18 September 2001, <http://www.globalpolicy.org/component/content/article/198/40343.html>, retrieved 18 April 2011.

The forecast accuracy of climate models is often frustrating for policy makers for two reasons: First, the fact that wildly varying assumptions constrained the models used to develop climate change projections. Second, the modeling accuracy is limited to broad geographic regions and as the size of the area of interest is reduced, the fidelity decreases. However, in spite of these modeling limitations and a perpetually distracting struggle in the public sphere to establish the causation of GCC, there is essentially universal scientific agreement that GCC is real, it will have devastating effects, but will be “felt highly unevenly by different social strata, communities and countries. This may reinforce social and economic inequities and further polarize societies.” It is for the above reasons that the issue of GCC is central to security concerns.³

Future Environment

*"Far more people are affected each year by extreme weather events than by violent conflict"*⁴

Joshua Busby

Evaluating long-term regional policy with respect to climate change requires that we understand what the future regional environment will look like and how confident that prediction is. There are many climate change problems that are well known and are expected to occur with exceptionally high confidence such as rising sea levels affecting heavily populated coastal areas, shifting vegetation zones, as well as increased disease spread due to bacterial propagation in higher temperatures. In addition, precipitation patterns will be altered which will affect food supply and its reliability, more frequent and significant extreme weather events (flooding, severe storms) are expected, along with the associated

³ Michael Renner, “New World Disorder: The Roots of Today’s Wars,” *Global Dialogue*, Autumn 1999, 104-105.

⁴ Joshua Busby, *Global Climate Change: National Security Implications* Edited by Carolyn Pumphry (Carlisle, PA: Strategic Studies Institute), 150.

environmental refugees on an irregular and massive scale.^{5, 6, 7} “Continued population growth, which Africa is among the highest in the world, intensifies these pressures.”⁸ It is these changes that are expected to drive increased suffering within Africa. As simply illustrated by the data and images in Appendices A and B, significant adverse trends in Africa are already being seen. However, significant aspects to climate change are less well understood. These include: (1) how these changes will affect different societies, (2) how well various societies will cope with the changes, (3) how adaptable they are based upon the resources available, and (4) the ability to cooperatively implement solutions while gaining and maintaining the will to accept the sacrifices that long-term solutions will require.⁹

The future environment is expected to be less capable to support the current population levels with the current infrastructure that is in place. A combination of direct effects upon the population is expected to occur: increased famine, infant mortality rates, instances of diseases and other health problems, while life longevity will decrease. Over time, populations will likely migrate or reduce in size until a sustainable level is reached. The possibility of armed hostilities may also contribute to decreasing the population size (either by direct attacks or by driving some people out of the contested geographic areas). Peaceful resolution and minimization of this tension is obviously preferable to these more violent and tragic possibilities. Peaceful solutions may be manifest in actions that reduce the demand for resources or increase the available supply without restricting the population size. Examples of reducing demand may be seen by developing more efficient irrigation and

⁵ Carolyn Pumphry, *Global Climate Change: National Security Implications*, (Carlisle, PA: Strategic Studies Institute), 3.

⁶ Joshua Busby, *Global Climate Change: National Security Implications* Edited by Carolyn Pumphry (Carlisle, PA: Strategic Studies Institute), 150.

⁷ Michael Renner, “New World Disorder: The Roots of Today’s Wars,” *Global Dialogue*, Autumn 1999, 104.

⁸ Michael Renner, “New World Disorder: The Roots of Today’s Wars,” *Global Dialogue*, Autumn 1999, 105.

⁹ Carolyn Pumphry, *Global Climate Change: National Security Implications*, (Carlisle, PA: Strategic Studies Institute), 8.

sanitation systems or by introducing heartier crops that may be more resistant to drought or flood conditions. Current actions that are available to increase supply include countering pollution, or constructing wells, desalination plants, canals, water storage and distribution systems.

While beyond the scope of this paper, it is essential for the reader to understand that many measures are not straightforward solutions and may have problems of their own, such as water wells that may tap into already overdrawn and unsustainable water tables or a desalination plant's power and security requirements. Unsustainable water tables are particularly troubling because these are not able to be quickly replenished if withdrawal rates continue to exceed demands, such as those in the Northern Sahara Basin Aquifer region.¹⁰ The result of this type of situation is forced migration of regional populations as some geographic areas would only be suitable for nomadic or seasonal living and would experience a significant reduction of the regional animal life.

Studies have routinely correlated variability of rainfall, refugee flows, and natural disaster with conflict.¹¹ Additionally, natural resource wealth can be causally linked to civil conflict, but not by a single mechanism. Instead, a variety of mechanisms influences a conflict's onset, duration and intensity (Figure 1).¹² It is for this reason that detractors to the severity of risks associated with scarcity may state that scarcity does not “cause” conflict. It is, in fact, more accurate to assert that scarcity *alone* does not *usually* trigger combat. It is equally misleading by those on the other side of the argument to assert that the identification

¹⁰ Robert Jackson et al, “Water in a Changing World”. Technical report. *Ecological Applications* 11, no. 4 (Aug 2001): 1031.

¹¹ Carolyn Pumphry, *Global Climate Change: National Security Implications*, (Carlisle, PA: Strategic Studies Institute), 150.

¹² Michael L. Ross, “How Do Natural Resources Influence Civil War? Evidence from Thirteen Cases,” *International Organization* 58, no. 1 (Winter, 2004): 35-67.

of causation in several case studies can allow that connection to apply to all situations where there exists scarcity of natural resources. Nevertheless, while there are a few studies that view the relationship with skepticism, the majority of studies in this area either assumes or concludes that resource scarcity in developing countries plays a pivotal role in initiating or aggravating conflict, but they also consider other factors that may also influence the situation. “Linkages between ecology, demography, and violence cannot be adequately assessed without careful consideration of the history of economic change and political activities within populations’ respective areas.”¹³ To further complicate the dynamic, sources of tension may not be constrained to internal groups, but may come from external actors. These states may see relative resource wealth as a motivation to intervene on behalf of a nascent rebel movement. They may be neighboring, regional or even distant states displaying an interest in current or future access to resources or influence.¹⁴

Fig. 1. Mechanisms by which resource constraints may facilitate conflict
(adapted from Maxwell, J. W., & Reuveny, R. Resource Scarcity and Conflict in Developing Countries. *Journal of Peace Research* 37 [May 2000], no 3: 303)

Economic Decline <ul style="list-style-type: none"> • <i>Decrease in quantity and quality of natural resources</i>
Population Migration <ul style="list-style-type: none"> • <i>Groups seek resources to replace those that have been depleted</i> • <i>Groups driven out by others seeking resources</i> • <i>Tensions between migrants and natives</i>
Weakening of Political Institutions <ul style="list-style-type: none"> • <i>Resource scarcity may erode confidence in their government</i> • <i>Civil unrest or conflict may result</i>
Above problems complicating existing problems <ul style="list-style-type: none"> • <i>Previous grievances / tensions exacerbated by additional problems</i>

¹³ Christopher T. Timura, “‘Environmental Conflict’ and the Social Life of Environmental Security Discourse,” *Anthropological Quarterly* 74 (Jul 2001): 109.

¹⁴ Michael L. Ross, “How Do Natural Resources Influence Civil War? Evidence from Thirteen Cases,” *International Organization* 58, no. 1 (Winter, 2004): 38, 63.

Each conflict or potential conflict is unique and must be considered in context since the multitudes of factors that combine to create the tension differ from other conflicts, often having this difference rooted in domestic or regional histories. Case studies, while useful in understanding the range of interactions that can be expected in various situations, also have a significant limitation with respect to anticipating the future environment. Namely, that it is difficult to identify the likely response by both rational and nonrational actors due to the current rates of change and the magnitude of variance from current climate issues and recorded human history. Put simply, the environment is changing at a rate not previously seen by humans and will look so dramatically different than it does today that it is difficult to anticipate how people will react.

Current United States Engagement

“We have terrorism, in Africa. It is poverty, HIV/AIDS and malaria. We have weapons of mass destruction, as well. It is an AK-47 usually carried by a child. All of this is played out every day in an environment we don’t even control.” African Ambassador¹⁵

The United States spent nearly \$8.2 billion in FY2009 in aid to Africa, quadrupling the amount spent just three years earlier in FY2006.¹⁶ However, that aid is largely distributed by one of several development programs run by no fewer than six United States Government (USG) agencies: United States Agency for International Development (USAID), Treasury, Department of Agriculture, Department of Commerce, Health and Human Services

¹⁵ Shannon Beebe, *US Strategy in Africa: AFRICOM, terrorism and security challenges*. Edited by D. J. Francis. (New York, NY: Routledge, 2010), 96.

¹⁶ Ted Dagne, “Africa: U.S. Foreign Assistance Issues”, (Washington D.C.: *Congressional Research Service*, 2011), 2.

and the Department of Defense (DoD).^{17, 18} In 2003-04, President Bush created even more organizations, the President's Emergency Program for AIDS Relief (PEPFAR) and the Millennium Challenge Cooperation (MCC), further exacerbating the problem of institutional fragmentation and organizational proliferation.¹⁹ While some programs have a unique focus and strive for differing objectives, some are redundant. In these cases, "the proliferation of mostly uncoordinated aid programs dedicated to single objectives makes little sense."²⁰

Of the \$8.2 billion, more than half of those funds went to health-related programs, yet militarization of the U.S. policy has a strong effect on where that aid is made available. "Much of the increase in spending has been motivated by the 'war on terrorism' rather than economic development or poverty alleviation."²¹

Fig. 2. Broad United States Strategic Interests in Africa. (Adapted from Ploch, L. *Africa Command: U.S. Strategic Interests and the Role of the U.S. Military in Africa* [Washington D.C.: Congressional Research Service November 2010]. 14-19)

Combating Global Terror
<ul style="list-style-type: none"> • <i>Building indigenous security and intelligence capabilities</i>
Global Trade
<ul style="list-style-type: none"> • <i>Retain access to vital sea lanes (Ex - Counter-Piracy)</i> • <i>Access to open markets</i>
Armed Conflicts
<ul style="list-style-type: none"> • <i>Preserving human dignity (US core value)</i> • <i>Destabilizes region</i>
Access to or Maintain Vital Resources
<ul style="list-style-type: none"> • <i>Oil</i> • <i>Carbon sinks (vegetation, agriculture)</i>

¹⁷ Nicolas Van De Walle, "US Policy towards Africa: The Bush Legacy and the Obama Administration", *African Affairs* 109, no. 434, (October 2010), 15.

¹⁸ Although an independent agency, USAID receives general direction and overall foreign policy guidance from the U.S. Secretary of State.

¹⁹ Nicolas Van De Walle, "US Policy towards Africa: The Bush Legacy and the Obama Administration", *African Affairs* 109, no. 434, (October 2010), 14.

²⁰ Nicolas Van De Walle, "US Policy towards Africa: The Bush Legacy and the Obama Administration", *African Affairs* 109, no. 434, (October 2010), 20.

²¹ Nicolas Van De Walle, "US Policy towards Africa: The Bush Legacy and the Obama Administration", *African Affairs* 109, no. 434, (October 2010), 13.

Every one of these strategic interests may be thought of as falling under the category of ‘security’ (Figure 2). The ability to obtain security in the long-term, however, requires a rethinking of that word. Generally, people think of security in a military or police term such as maintaining peace or combating violence. Yet, it is generally accepted that the majority of the concerns such as terrorism, or armed conflicts are visible irritants and the ultimate problem is ‘human security’, which is to describe the concerns of survival such as food security, health, education, clean drinking water, shelter, economic security, environmental security, personal safety and absence of threats of violence. Often policy makers look at an issue in a specific region and want to know which issue will cause the house of cards to fall down. However, considering security problems in Africa as a house of cards, “it makes little sense working to strengthen any one card without strengthening the whole house.”²²

On 5 Apr 2011, Gen Ham, Commander UNITED STATES AFRICA COMMAND (USAFRICOM) provided the command’s 2011 posture statement to the House Armed Services Committee. In this document, Gen Ham laid out the perspective and objectives by which USAFRICOM would seek to achieve the objectives of the Command and those specified in the National Security Strategy. The declared priorities of the USG (Appendix C) cover a wide variety of socioeconomic concerns and generally match African desires. USAFRICOM Theater Objectives (Appendix C), however, largely address countering terrorism, access for the United States in the region, and the ability for a capable military/police force to respond to conflicts and crises while negating transnational threats such as piracy, trafficking and piracy.

²² Shannon Beebe, *US Strategy in Africa: AFRICOM, terrorism and security challenges*. Edited by D. J. Francis. (New York, NY: Routledge, 2010), 103.

USG efforts are generally prioritized to emphasize regional partners that have displayed a willingness and capability to provide both internal, as well as regional stability forces. The intent is that these ‘anchors’ would provide a steadying and supportive role in the development of its neighbors. This results in many impoverished and weaker nations only indirectly benefiting from many aid programs. Broad programs do exist within USAFRICOM that assist other states such as the State Partnership Program and numerous exercises like AFRICA ENDEAVOR or NATURAL FIRE. However, the framework for engagement funnels aid to those few key partners that are seen as best able to quickly meet that security goal, rather than in ways in which the greatest benefit to the most people might be realized.^{23, 24, 25} In order to be fair, it should be pointed out that the DoD distribution method is not some nefarious scheme to leave disenfranchised populations in its wake. It is a difference in outlook on how to handle a complex problem. The DoD prefers that development serve security, whereas some organizations such as USAID see security as a prerequisite for development. These types of fundamental differences and mismatches by large organizations that do not report to one another guarantee that resources will continue to be used in less efficient – and possibly opposing – ways.²⁶ To cast a harsh light on how this is seen by other nations, including the recipients of aid to Africa, the US provides the lowest portion of its aid to the lowest-income states of any major donor, which directly contradicts the public rhetoric. This combined with a historic failure to deliver on grandiose promises

²³ The State Partnership program connects a U.S. state’s National Guard to an African nation for military training and relationship building.

²⁴ AFRICA ENDEAVOR is a large-scale communications exercise designed to encourage interoperability, information exchange, and regional cooperation among African nations so they can coordinate with one another during natural disasters and emergencies.

²⁵ NATURAL FIRE is a joint and multi-national exercise that seeks to improve interoperability and build partner capacity to respond to complex humanitarian emergencies, specifically planning for possible pandemic influenza outbreaks.

²⁶ Nicolas Van De Walle, “US Policy towards Africa: The Bush Legacy and the Obama Administration”, *African Affairs* 109, no. 434, (October 2010), 15.

such as the Millennium Challenge Account and inconsistencies in the application of good governance criteria have resulted in costs to the United States reputation.²⁷

USG efforts by various agencies to provide military training to African militaries or police forces appears to directly contribute to the defined National Security objectives of the USG in Africa. This training often consists of operational activities such as counter-piracy, counter-improvised explosive device (IED), board, search and seizure team operations or search and rescue planning.^{28, 29} Certainly, the operational training as described provides some measure of progress against various internal and external threats for the benefactors of this training – and thus, the USG. However, it is telling that African military leaders have identified security forces training in more fundamental activities such as infrastructure development and medical training as much more significant to their needs.³⁰

It is possible that the USG or its organizations such as USAID or USAFRICOM may be conducting substantial preparation for GCC in Africa. By the nature of some of the relationships within the continent, some efforts and rationale behind those efforts are likely to be classified or at least obscured. Nevertheless, substantial efforts specifically for the purpose of anticipating and mitigating GCC challenges are not readily apparent.

ALTRUISM VS STRATEGIC INTERESTS

The reasons for a state to become involved within another nations borders such as in the event of violent conflict, humanitarian relief needs or a major developmental project can

²⁷ Nicolas Van De Walle, “US Policy towards Africa: The Bush Legacy and the Obama Administration”, *African Affairs* 109, no. 434, (October 2010), 12.

²⁸ United States AFRICOM official Web Site: “Press Releases.” <http://www.africom.mil/articleArchives.asp> (accessed 30 Mar 2011).

²⁹ USAFRICOM does a wide variety of activities not limited to ‘traditional’ operational activities, but these operational types of activities are a major component of much of the direct partnerships with the African nations.

³⁰ Shannon Beebe, *US Strategy in Africa: AFRICOM, terrorism and security challenges*. Edited by D. J. Francis. (New York, NY: Routledge, 2010), 106.

be extremely varied. However, those reasons can generally be described by one of two broad rationales: altruistic motivations or the pursuit of one's own national strategic interests.

Altruistic motivations will usually be pursued due to domestic or international pressure, although may occur prior to the pressure becoming substantial due to the foresight of political leadership. From a global community perspective, international actions in pursuit of unselfish ends can be a critical way for assistance to flow from nations with excess capabilities towards those that are impoverished or otherwise unable to significantly help themselves. These actions can also provide tangible or indirect benefits to our national strategic interests by bolstering our national image within regional or global partners. These partners may then become more open to continued U.S. involvement due to increased trust and familiarity between us rather than suspicion that our intentions are merely to exploit their resources. However, in a pragmatic and fiscally constrained environment, an expectation that the United States will provide either sufficient and equitable humanitarian assistance or developmental projects among all countries displaying a need for that assistance is not likely to be fulfilled. In addition, the historical record has shown numerous armed conflicts that neither the United States nor the United Nations have become significantly involved in, in spite of the widespread suffering. While a notion of humanity, dignity or moral responsibility to fellow mankind may suggest an obligation to intervene in any armed conflict, political realities make such an idea relegated to an academic discussion rather than realistic policy. Respect for national sovereignty, fiscal constraints, resource or capability limitations or an aversion to expend the lives of one's own people in the pursuit of what may be seen as the interests of other nations are just a few of the reasons that a states 'hand of intervention' may be stayed.

Long-term planning for humanitarian projects is often fragile. Many projects such as antimalarial campaigns or large dams may take many years of steady funding to be completed, thereby relying on a reliable political will. The changing and often unpredictable levels of commitment from political leaders make it challenging to pledge to undertake a large project. A change of administration, changing economic realities or even business pressures may cause an ongoing project to be terminated abruptly, leaving local populations disillusioned. For this reason, it can be expected that in the absence of a sustained pressure for substantial projects or for our intervention into a humanitarian crisis, these types of actions will most likely have to be justified due to a close connection to our national strategic interests. It is necessary to understand that there is a real danger in framing issues in Africa from a perspective of U.S. security. While our goals may be similar, it is unlikely that a country with unique national and regional concerns of a survival nature will have priorities that directly align. In fact, with significant poverty, health and sustenance concerns, it would seem foolish to see our economic and resource access concerns as important to most African nations. One could ask why a nation should be concerned about terrorists in their midst when they cannot feed their family or care for their sick. In spite of this significant difference in perspective, many authors and speakers have suggested that framing the African issues from a U.S. security perspective is one of the only ways that seem to be able to capture the attention of policy makers and the commitment of resources.

NIGERIA

West Africa is the most populous region in Africa and is home to 16 countries straddling a handful of river systems and varied geography. Nigeria alone contains over half of the region's people (Appendices D and E). Nigeria was also the fourth largest exporter of

oil to the United States, and was the second largest exporter from outside North America (Appendix F). Nigeria's location among dense populations, a vulnerable ecosystem and strained ethnic and political tensions virtually ensures that Nigeria will be at the heart of future GCC issues. Currently, internal problems pose a continuous threat to the stability of the Nigerian government as both corruption and disenfranchisement among the poor is widespread. The escalation of lawlessness, a humanitarian disaster or even the status quo may result in eventual upheaval within Nigeria. The implications of interruptions to the Nigerian oil supply make Nigeria a strategic energy concern, while its location and regional population density ensures that it will be a humanitarian concern, as well.

The USG approach to bolster defensive forces with training as described previously, would seem to be the fastest way to achieve local or regional security. The actual impact from the USG emphasis, however, is that this perspective is focused on "the interests of the governing classes and their propertied allies, while most Nigerians are alienated from the security process that ironically turns on them from time to time."³¹ This security-emphasis approach seems to maintain or increase tensions between the privileged minority and the impoverished and disenfranchised majority, increasing the likelihood of a conflict that we wish to avoid. Therefore, it seems likely that the USG approach actually hinders the very developments we desire. The actual security assistance that is needed for long-term development and progress is neglected while not providing real assistance to the majority of the population. A better method to address internal Nigerian instability is to make the interests of the people the focus of the national and regional policies.

³¹ Cyril Obi, *Oil, Environmental Conflict and National Security in Nigeria: Ramifications of the Ecology-Security Nexus for Sub-Regional Peace*. University of Illinois Special Report. (Champaign, IL: University of Illinois at Urbana-Champaign), 4.

Environmentally, there are many problems that Nigeria is already struggling with. Nigeria and Chad have already grappled over border locations in the vicinity of Lake Chad due to its wildly changing water levels. Industrial pollution by international petroleum companies, as well as petroleum theft, is rampant causing lost revenue. The various drainage channels of the Niger River (the greatest river system in Western Africa) crisscross over 11 countries in the region, which implies that sustenance resources such as water have the potential to directly impact countries throughout the region. These types of cross-border regional issues have been seen in many areas throughout the world in activities such as uncoordinated irrigation projects, dam development, pollution or drying up of tributaries as water levels become more unpredictable.

Nigeria, like most of West Africa is water-constrained and most of its agriculture is irrigated through rainfall, thus exposing the majority of the mostly rural population to the effects of climate change on its food production and water access. Current rainfall records appear to show that Nigeria has an abundance of water. Yet, when considering that Nigeria is the most populous nation in Africa, Nigeria actually has per capita water availability less than some of the arid portions of Africa. In spite of this, the more robust economy due to petroleum sales, and relative influence in the region makes it likely that Nigeria would be seen as a regional haven for dislocated environmental migrants within Western Africa. This influx of immigrants would likely overwhelm already fragile and marginal support systems, resulting in chaos and an escalation in violence as "outsiders" enter and "steal" resources already in high demand by indigenous Nigerians. This would also be a real or perceived threat that the region might become a haven for terrorism. Currently, there is little emphasis or effort devoted towards preparing for internal resettlement within the regional nations, nor

for any nation to receive environmental refugees from other countries. This failure would prevent the ability to gradually and peacefully resettle people throughout the country with a wider area serviced by more stable water delivery systems. At that point, it would be much too late to prevent the problem, but we would likely see USAFRICOM reprioritize and be forced to devote tremendous resources to try to re-secure this area. If the results of international efforts in Somalia are any indication, a failed state can be an extremely difficult and expensive thing to resolve.

Certainly, scarcity of resources already exists in the region. However, GCC will serve as a mechanism to exasperate those existing scarcities while creating new ones from the pressures resulting from the actions and reactions by the populations and their leaders. Some actions may result in peaceful migration, while others may result in people being forced to flee violence and disasters that make their homelands uninhabitable.

CONCLUSIONS AND RECOMMENDATIONS

*“To maintain relevance in the eyes of Africans, the West will have to shift from imposing what it sees as the **right** definition for security on to Africa, to what Africans see as a **relevant** definition for their own security.” Shannon Beebe³²*

Resources will continue to be a significant limitation to both African nations and external actors seeking to shape the geopolitical environment on the continent. The importance of a stable region and self-supporting security apparatus is not disputed. The differing viewpoints on how to reach a stable and prosperous end-state for Africa nations, results in inefficient, sometimes conflicting approaches among U.S. governmental agencies and is failing to help the nations in West Africa to prepare for the drastic changes of GCC.

³² Shannon Beebe, *US Strategy in Africa: AFRICOM, terrorism and security challenges*. Edited by D. J. Francis. (New York, NY: Routledge, 2010), 100.

For its part, by providing training to establish terrorism-related security measures, the United States military continues to emphasize short-term results at the cost of long-term solutions. Continuing to prioritize the United States' definition of security over the African definition will result in neither substantially preparing for GCC, nor achieving our long-term stable objectives. It will also feed widespread suffering, regional instability, require expensive reactionary military operations and likely result in an unpredictable supply of raw petroleum resources. In order to provide a beneficial contribution to the continent while simultaneously achieving our objectives, we should direct more long-lasting efforts at enabling "human security".

1. *Need to acknowledge distrust of America and outside powers has a sound basis.* The colonial experience included external powers forcing an idea of security that had never taken into account the Africans desire to live in dignity on their continent.³³ Pollution by U.S. and other international petroleum companies reinforces the perception that outside nations are only interested in exploiting African nations, resulting in a reluctance to work together. USG should recognize the strategic impact that U.S. companies operations may have on other countries and be prepared to provide aggressive oversight of some of these operations outside our own borders.

2. *The U.S. government maintains the need for a more specific unified voice (White House guidance) to direct implementation.* The differences between the DoD and agencies such as USAID regarding development and security are not superficial. These types of fundamental

³³ M.A. Mohamed Salih, *US Strategy in Africa: AFRICOM, terrorism and security challenges*. Edited by D. J. Francis. (New York, NY: Routledge, 2010), 81.

mismatches by large organizations that do not report to one another guarantee that resources will continue to be used in less efficient – and possibly opposing – ways.³⁴

3. Need to prioritize the elimination of disenfranchisement of social groups over U.S. defined 'security' goals. The USG needs to stop framing good governance as a criterion for aid. It is disingenuous or at the least, it is misperceived. At worst, we will be forced to provide massive aid in an area that clearly does not have good governance to protect a strategic interest, such as a collapse in Nigeria. Additionally, 'competitors' for relationships such as China overtly downplay the importance of such aspects as a possible constraint upon their assistance. The USG should assist in infrastructure development such as efficient and transparent governmental systems, efficient land titling bureaucracies and land tenure laws, which will minimize the minority control of the country and reduce the sense of alienation. This will require that the USG convince recipient countries that reforms are in their own interest for increasing the likelihood of retaining power in a democratic society, as well as the betterment of their people. USG leaders must also understand that political and economic liberalization generally seems more frustrating than empowering in the short term. There is a real likelihood that popular opinion can result in a backlash, even when these measures are vital. Providing guidance and advice to increase the countries understandings of their resources, disputes, and the range of options available to resolve them will be essential.

4. USG organizations that are involved with traditional security-related operations should redirect its support and training to projects that are more suitable for the African problem rather than USG-style security concerns. These actions would only minimally deal with

³⁴ Nicolas Van De Walle, "US Policy towards Africa: The Bush Legacy and the Obama Administration", *African Affairs* 109, no. 434, (October 2010), 15.

symptomatic issues such as terrorism and external threats.³⁵ They would, instead, be executed in conjunction with other humanitarian and governmental assistance that helped nations better care for their people.

The African continent has more than its share of problems to deal with: water, energy and food scarcities, income inequalities, disease epidemics, poor sanitation and limited medical care. GCC promises to amplify these hardships and present additional burdens upon the populations. Until the populations feel that they are receiving equitable support from their governments, our true security goal will be unmet. It is important to approach the problems as if “they were integrated, multidisciplinary and multi-sectorial, and not as if they were independent of each other, which leads to wasted money and efforts, ineffectiveness, and unintended consequences.”³⁶ By treating the symptoms and not the cause, we risk being contributors to world instability through misguided actions.³⁷

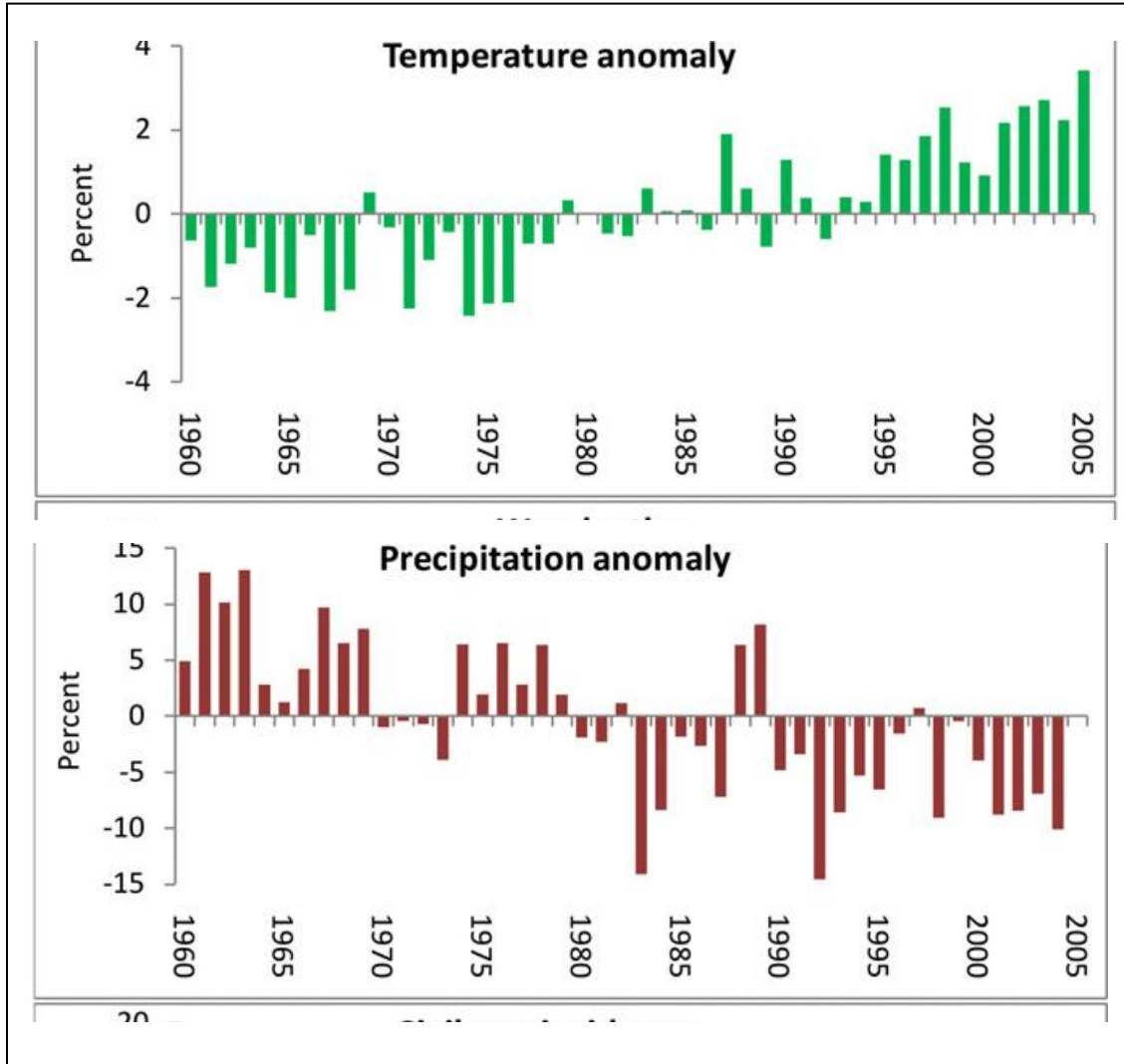
³⁵ Christopher. T. Timura, "Environmental Conflict" and the Social Life of Environmental Security Discourse. *Anthropological Quarterly* 74, no. 3 (2001), 109-111.

³⁶ Zarrn Caldwell, “Development: Security Experts See Impact of Resource Scarcity,” *Global Information Network*, (6 October 2009): 2. <http://www.proquest.com/> (accessed 28 Feb 2011)

³⁷ Shannon Beebe, *US Strategy in Africa: AFRICOM, terrorism and security challenges*. Edited by D. J. Francis. (New York, NY: Routledge, 2010), 96.

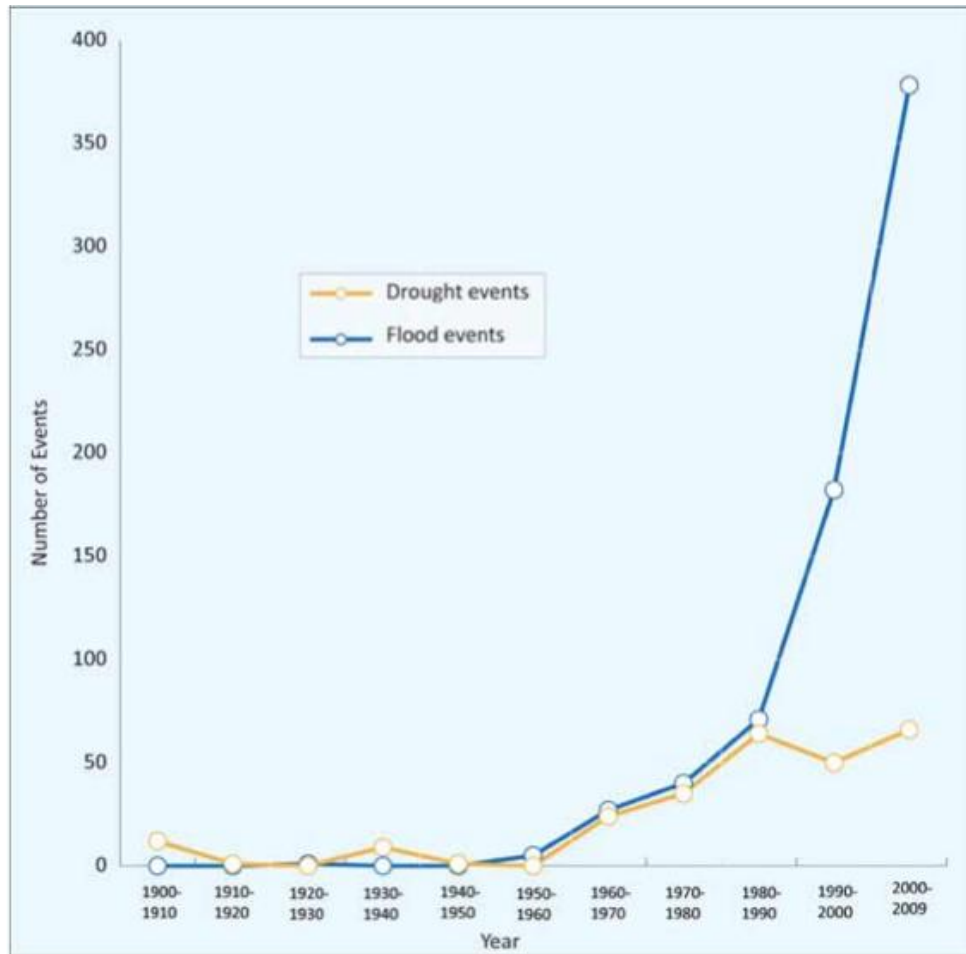
Appendix A

Fig. A.1. African Temperature and Precipitation Variation and Trends 1960-2005
(Courtesy of Buhaug, Halvard., "Climate not to blame for African Civil Wars," 10 August 2010, <http://www.pnas.org/content/107/38/16477.full.pdf+html>, (accessed 14 Feb 2011).



Appendix B

Fig. B.1. Trend in flood and drought events in Africa (Courtesy of United Nations Environment Programme. *Africa Water Atlas*. , 2010, www.unep.org [accessed 29 April 2011: 166])



Trend in the number of recorded flood and drought events in Africa

Appendix C

United States Government and USAFRICOM Goals Within Africa

(Courtesy of Gen Carter F. Ham, “Testimony”, House, *United States Africa Command Posture Statement: Hearing before the House Armed Services Committee*, 112th Cong., 1st sess., 2011.)

Vital National Security Interest

- Protecting the lives and interests of the American people by reducing threats to the homeland and abroad

US Government African Priorities

- Good governance
- Economic progress
- Preventing and resolving conflicts
- Strong public health programs
- Helping our African develop the capacity to meet the demands of transnational challenges

USAFRICOM Operating Principles

- Listen and learn from African partners
- Understand and address continent using a regional framework
- Collaborate as part of an interagency team

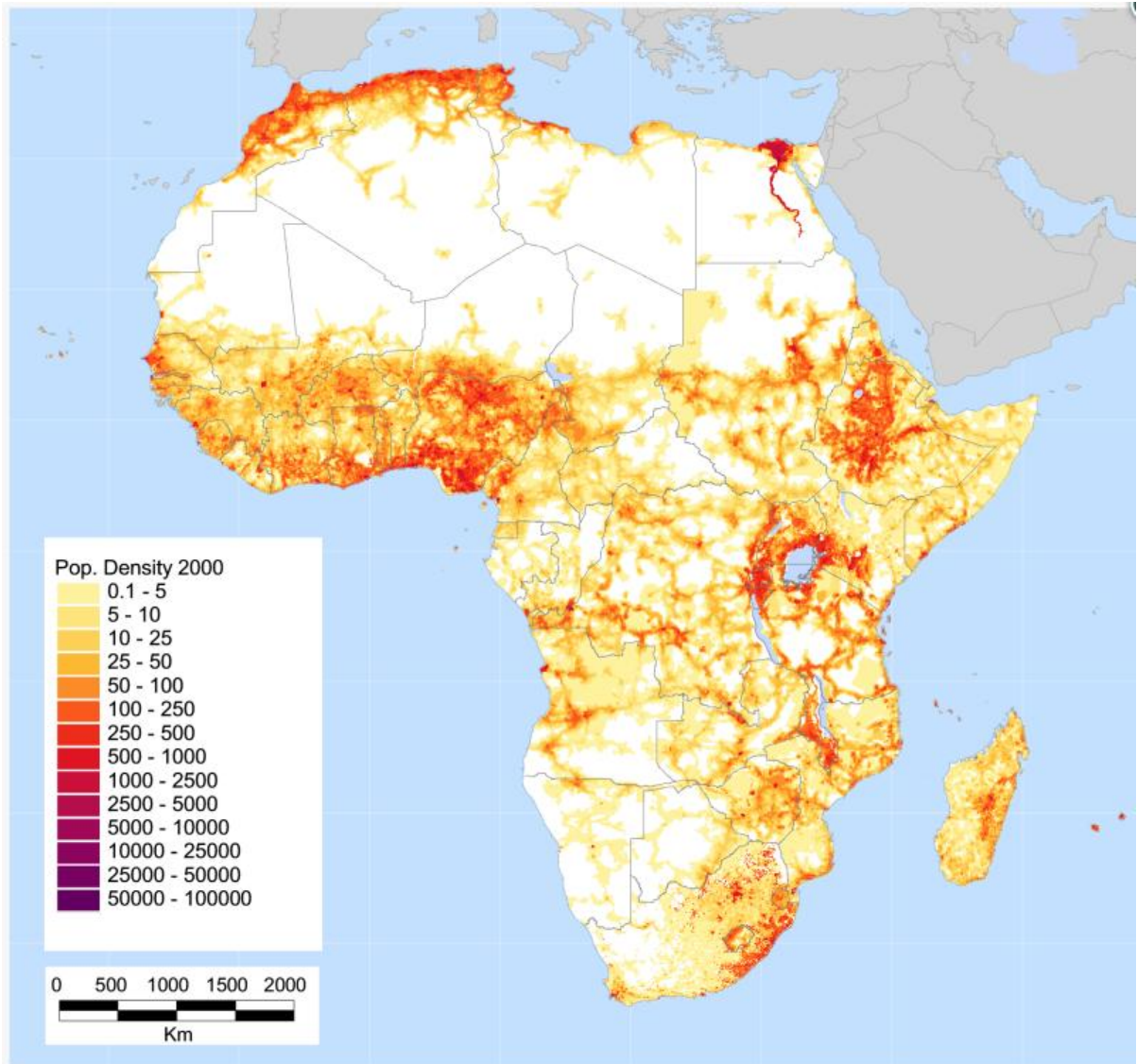
USAFRICOM Theater Objectives

- Ensure that the al-Qaida networks and associated violent extremists do not attack the United States
- Maintain assured access and freedom of movement throughout our AOR
- Assist African states and regional organizations in developing the will, capability, and capacity to combat transnational threats such as terrorism, piracy, and the illicit trafficking of weapons, people and narcotics
- Assist African states and regional organizations in developing the capacity to execute effective continental peace operations and to respond to crises
- Encourage African militaries to operate under civilian authority, respect the rule of law, abide by international human rights norms, and contribute to stability in their respective states.

African Partner Goals (consistent with American interests)
• That they have capable and accountable military forces that perform professionally and with integrity
• That their forces are supported and sustained by effective, legitimate, and professional security institutions
• That they have the capability to exercise the means nationally and regionally to dissuade, deter, and defeat transnational threats
• That they have the capacity to increase their support to international peacekeeping efforts

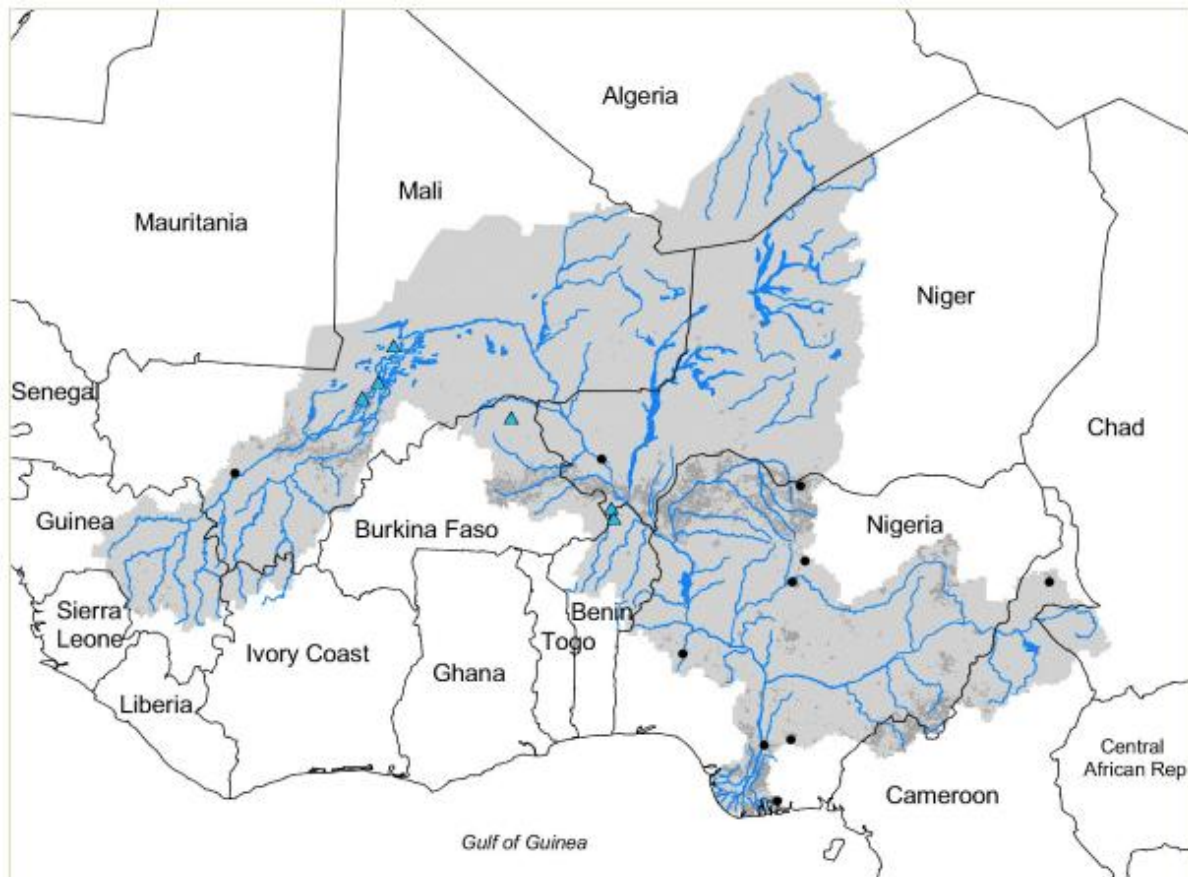
Appendix D

Fig. E.1. African Population Density, 2000 (Courtesy of Ben Byerly's Web Site: "Ben Byerly's Muddy Mix." <http://benbyerly.wordpress.com/2009/09/25/african-population-density-to-surpass-europes-next-year-graph/> [Accessed 19 Feb 2011])



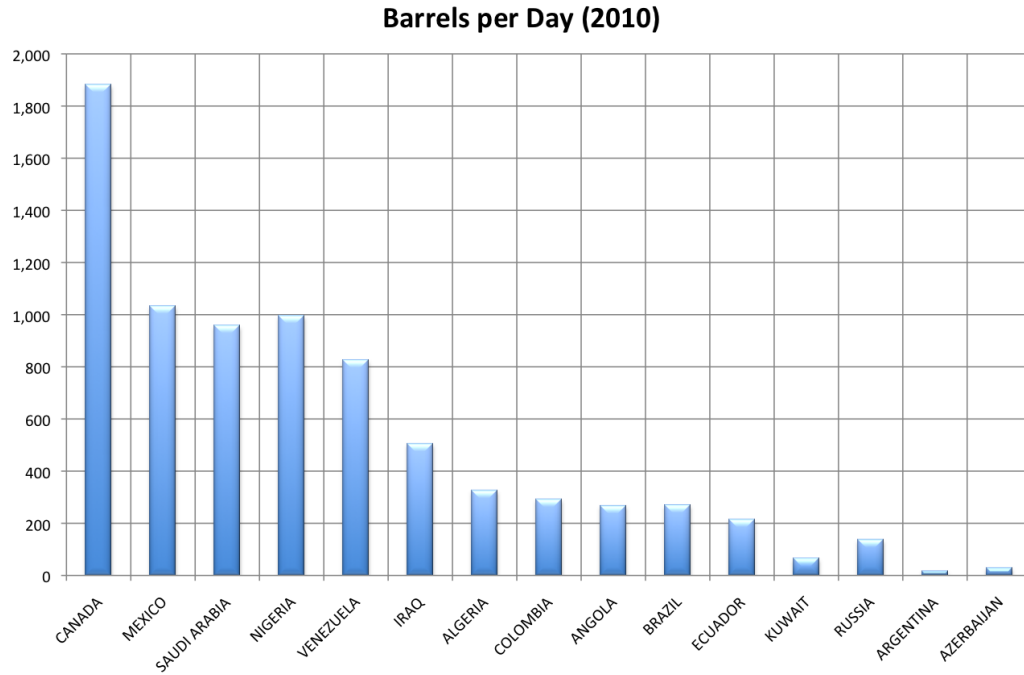
Appendix E

Fig F.1. Niger River Basin Watersheds and National Boundaries (Courtesy of WWF's Web Site: "WWF for a living planet." http://wwf.panda.org/about_our_earth/about_freshwater/rivers/niger/ [Accessed 21 Feb 2011])



Appendix F

United States Oil Imports by Country, 2010 (Adapted from U.S. Energy Information Administration's Web Site: http://www.eia.gov/pub/oil_gas/petroleum/data_publications/company_level_imports/current/import.html [Accessed 30 Mar 2011])



BIBLIOGRAPHY

- Beebe, Shannon. "Solutions not yet sought." In *US Strategy in Africa: AFRICOM, terrorism and security challenges*, edited by David J. Francis. New York, NY: Routledge, 2010.
- Buhaug, Halvard. "Climate not to blame for African Civil Wars." *Center for the Study of Civil War, Peace Research Institute Oslo (PRIO)*. Oslo, 10 August 2010.
- Caldwell, Zarrn. "Development: Security Experts See Impact of Resource Scarcity." *Global Information Network*. New York, NY, 6 October 2009.
- Dagne, Ted. *Africa: U.S. Foreign Assistance Issues*. Congressional Research Service, Washington D.C.: Congressional Research Service, 2011.
- Jackson, Robert B., et al. "JSTOR." *JSTOR*. 1 August 2001. www.jstor.org/stable/3061010 (accessed 15 February 2011).
- Maxwell, John W., and Rafael Reuveny. "Resource Scarcity and Conflict in Developing Countries." *Journal of Peace Research* (Sage Publications, Ltd.) 37, no. 3 (May 2000): 303.
- Obi, Cyril. *Oil, Environmental Conflict and National Security in Nigeria: Ramifications of the Ecology-Security Nexus for Sub-Regional Peace*. Champaign: University of Illinois at Urbana-Champaign, 1997, 21.
- Ploch, Lauren. *Africa Command: U.S. Strategic Interests and the Role of the U.S. Military in Africa*. CRS Report for Congress, Congressional Research Service, 2010, 45.
- Postel, Sandra, and Aaron Wolf. "Dehydrating Conflict." *Global Policy*. 18 September 2001. <http://www.globalpolicy.org/component/content/article/198/40343.html> (accessed 18 April 2011).
- Pumphrey, Carolyn. *Global Climate Change: National Security Implications*. Carlisle, PA: Strategic Studies Institute, 2008.
- Renner, Michael. "New World Disorder: The Roots of Today's Wars." Edited by Global Dialogue. *Global Dialogue*, Autumn 1999: 99-111.
- Ross, Michael L. "How Do Natural Resources Influence Civil War? Evidence from Thirteen Cases." *International Organization* (Cambridge University Press) 58, no. 1 (Winter 2004): 35-67.
- Salih, M.A. Mohamed. "An African perspective on security." In *US Strategy in Africa: AFRICOM, terrorism and challenges*, edited by David J. Francis. New York, NY: Routledge, 2010.
- Timura, Christopher T. "'Environmental Conflict' and the Social Life of Environmental Security Discourse." *Anthropological Quarterly* (The George Washington University Institute for Ethnographic Research) 74, no. 3 (Jul 2001): 109.
- United Nations Environment Programme. "United Nations Environment Programme." www.unep.org. United Nations Environment Programme. 2010. www.unep.org (accessed 9 April 2011).
- USAFRICOM. *USAFRICOM Press Releases*. December 31, 2010. <http://www.africom.mil/articleArchives.asp?Yr=2010&lang=0> (accessed 16 April 2011).
- Van De Walle, Nicolas. "US Policy Towards Africa: The Bush Legacy and the Obama Administration." *African Affairs*, November 2009: 1-21.